

What's New!



Guidelines Update!

Efforts have begun to update the Naval Combat System HCI Guidelines that were previously produced under the Combat System Function Allocation Board (CSFAB) effort. DD(X) program is using the current version.

Ana Borja joins UCD Team! In December 2002 we welcomed Ana to our team from Xerox as a usability test expert. Ana is currently working to test new HCI versions for the ONR FNC project.

Dr. Earl Williams joins UCD Team – In February he joined the UCD team from Gormar Tech. as a human factors scientist. Dr. Williams has begun working multiple projects and developing new research projects.

V5 Tactical Tomahawk Usability Testing Completed.

Fleet users at both west and east coast facilities favored the Task Management Design options for upcoming v5 TTWCS over designs that lacked this support.

Editor: Dr. Glenn Osga, Code 2441
UCD Team Leader: Nancy Campbell, Code 244209

Welcome to UCD Newsletter

Welcome to the first issue of our User-Centered Design Newsletter. Our goal for this letter is to communicate events and research results from our projects and studies to our colleagues in government and industry. We hope to increase the visibility and reach of UCD towards improving our warfighters' future capabilities. The newsletter will highlight recent results and reports, as well as sharing our design process and lessons learned. We hope this will increase dialogue across the naval and joint research activities that share similar interests and design concerns. We are continuously looking for improvements to design process and design products. Perhaps this newsletter will facilitate that dialogue. We



Navy personnel participate in usability tests of new human-computer interface designs for Tactical Tomahawk System

gather lessons from both success and failure in design as we refine requirements. This newsletter may stimulate discussion of UCD in areas we cannot yet envision. Undoubtedly others can learn from our results, replicate, or improve upon them. Thank you for reading!

G. Osga

User-Centered Design Team

The UCD team is one of several work teams in the *Simulation and User-Interface Technologies* Division <http://www.spawar.navy.mil/depts/d40/D44.htm> at the Space and Naval Warfare Systems Center San Diego (SSC San Diego). We are proud of our SSC San Diego legacy in human-systems integration dating back to post WWII 1950s and remaining strong through multiple laboratory name changes! While our name has sometimes changed, our goal to achieve quality human factors engineering (HFE) remains constant. Today a multi-disciplinary team of human factors engineers, computer scientists,

mathematicians and cognitive scientists compose our UCD work group of 18 government civilian scientists and 4 onsite support contractors. We focus much of our work onsite to create government-owned products that can be shared with government facilities and contractors. The team is supported by individual and team human performance laboratories (see photos next page). With a rich Navy and Marine Corps presence in San Diego we enjoy a diverse source of input for usability testing. We also draw support across our other division teams in Collaborative Technologies, Decision Support, Speech, and Advanced Command Center Engineering.

G. Osga

Our Facilities SSC San Diego Topside Area



367 Demo/Test Lab



365
Usability
Lab



356 Team Laboratory



We love our SD bay view!

User-Centered Design Process

UCD News Vol. 1. No 1

User-Centered Design (UCD) is both a **process** and a **product** design focus. The process focuses design requirements on the needs of the user in two main respects: 1) focusing requirements on software that produces quality task products that support key aspects of a mission process, thereby reducing user workload and 2) focusing the design qualities of these task products in ways that best support human cognitive, visual and psychomotor capabilities and limitations. User support requirements are defined from a work-process perspective,

which identifies all sources of workload and decision support requirements through the entire work process. This differs from a requirements approach that looks at data sources, information qualities, and network capabilities and limitations first, often leading to data dumped in windows with gaps between stages of work processing. In future newsletters we'll have more on UCD, task products, work process and the resulting requirements and design.

[G. Osga](#)

Project Focus: Future Naval Capabilities



The Office of Naval Research began new efforts in developing Future Naval Capabilities (FNCs) in 2002. We currently support the **Knowledge Superiority and Assurance FNC** together with the **Capable Manpower FNC**. The focus of the KSA FNC is Land-Attack Warfare decision support, specifically the Tomahawk Weapon Control System. Near-term the FNC

project will result in improved designs for v5 Tactical Tomahawk, followed by further improvements in v6. The "Task Management" concept of a **Goal-Explicit Work Interface System (G-WIS)** is being introduced in v5 at a basic level of design, with decision support details added in v6. Read more about the concept of a G-WIS design in publications referenced below.

Meet UCD Team Members...



Each newsletter will focus on a member of our UCD team. This month the spotlight shines on **Nancy Campbell**, Team Leader for Code 244209, the UCD Team. Ms. Campbell possesses dual Masters degrees in Biology and Electrical Engineering. She also has supported government projects as an engineer and program manager for 24 years in diverse areas of biology & robotics, and since 1987 in human-computer interface software and design. She has been UCD (Code 244209) team leader since 1993!



Recent Reports & Publications

Osga, G. (2003) **Work-Centered Computing: Future Challenges**. Paper Presented at the 9th Annual Human Factors & Ergonomics Symposium, San Diego Chapter, Human Factors & Ergonomics Society. March, San Diego, CA.

Borja, A., Kellmeyer, D., & Edwards, B. (2003) **Task Manager for TTWCS v5 Usability Evaluation Report**. February (Tech Report Number TBD)

Kellmeyer, D. & Borja, A. (2003) **LACS Rapid Prototype Version 10.2 Usability Evaluation Report**. April. (Tech Report Number TBD)

Osga (2003) **Building Goal-Explicit Work Interface Systems**. Paper presented at the Human-Systems Integration Symposium, Enhancing Human Performance in Naval and Joint Environments, June 2003.

Osga (2003) **Human-Centered Shipboard Systems and Operations** in H. Booher (Ed.). Human-Systems Integration, Wiley & Sons. (note: made available at the Human-Systems Integration 2003 Conference in June)

UCD Team On the Go...



August 2003

John Kammerer

Human Performance 2003 Symposium Technologies for Advancing Human Performance, 19-20 Aug. NASA Johnson Space Center Houston TX.

Brian Croft

Human-Interface Tech (HIT) Lab Symposium 4-5th Aug. Univ of Washington Seattle, WA.

October 2003

Year-End Land Attack Combat System HCI Demonstration Oct 27-29th at NAVSEA Dahlgren Tomahawk Laboratory.